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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/835,154	04/14/2001	Vladimir N. Georgiev	11983.0080	3877

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EXAMINER

PHAM, TUAN

ART UNIT	PAPER NUMBER
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2643

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/835,154

Applicant(s)

GEORGIEV, VLADIMIR N.

Examiner

TUAN A PHAM

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-9,11-15,17-21,23 and 24 is/are rejected.
- 7) ☒ Claim(s) 4, 10, 16, and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 5-9, 11-15, 17-21, and 23-24 rejected under 35 U.S.C. 103(a) as being unpatentable over Raman et al. (U.S. Patent No.: 5,400,394, hereinafter, "Raman") in view of Ashley et al. (U.S. Patent No.: 5,535,194, hereinafter, "Ashley").

Regarding claims 1, 7, 13, and 19, Raman teaches a digital signal processing system comprising (see figure 3):

a near end and a far end connected by a pair of signal transmission paths (see figure 3, RX 202, TX 204),

a signal processor at the near end (right hand side of figure 3) through which signal commands are transmitted from the near end to the far end (left hand side of figure 3)(see figure 3, col.7, ln.19-33),

a signal transducing device (telephone) at the far end to receive the signal commands and to transmit to the near end signals indicating the state of the signal transducing device (see col.7, ln.19-32), and

a signal canceller operatively associated with the signal processor to subtract echo signals from the received signals (see col.7, ln.19-68).

It should be noticed that Raman fails to teach the technique for employing Auxiliary-Vector filtering. However, Ashley teaches such features (see col.4, ln.1-8) for a purpose of filtering the noise signals in communication system.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the use of technique for employing Auxiliary-Vector filtering, as taught by Ashley, into view of Raman in order to reduce noise in communication system.

Regarding claims 2, 8, 14, and 20, Ashley further teaches the system wherein the signal canceller contains an array of filter coefficients and wherein the Auxiliary Vector filtering and multiplies the signals by the array of filter coefficients and subtracts the result from the transmitted signal commands (see col.6, ln.22-65).

Regarding claims 3, 9, 15, and 21, Raman further teaches the system wherein the signal canceller is adaptive in being capable of changing the filter coefficients while receiving data from the transmitted signal commands and from the received signals (see col.6, ln.1-23).

Regarding claims 5, 11, 17, and 23, Raman further teaches the system wherein voice signals are processed (see col.5, ln.44-53).

Regarding claims 6, 12, 18, and 24, Raman further teaches the system wherein the signal processor is the digital signal processor of a voice mail system, and wherein the signal commands include voice mail prompts and the undesired signals include echo (see col.5, ln.28-53, appendix A).

Allowable Subject Matter

3. Claims 4, 10, 16, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In order to expedite the prosecution of this application, the applicants are also requested to consider the following references. Although Arnon et al. (U.S. Patent No. 5,029,167), Gokcen et al. (U.S. Patent No. 5,125,024), Benesty et al. (U.S. Patent No. 6,377,682), and Ashley et al. (U.S. Patent No. 5,295,136) are not applied into this Office Action; they are also called to Applicants attention. They may be used in future Office Action(s). These references are also concerned for supporting the system and method for canceling echoes in voice messaging system and echo canceller for use in communication system.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Tuan A. Pham** whose telephone number is (703) 305-4987. The examiner can normally be reached on Monday through Friday, 8:00 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Curtis Kuntz can be reached on (703) 305-4708 and

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Business Center (EBC) at 866-217-9197 (toll-free).

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June 26, 2004

Examiner

Tuan Pham


CURTIS KUNTZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600